

Title (en)
HIGH PERFORMANCE HEAT PUMP UNIT

Title (de)
HOCHLEISTUNGSFÄHIGE WÄRMEPUMPENEINHEIT

Title (fr)
UNITÉ DE POMPE À CHALEUR À HAUTES PERFORMANCES

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Application
EP 12815833 A 20121212

Priority
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Abstract (en)
[origin: WO2013088356A1] A heat pump unit (1) comprises at least one main circuit (2) adapted to perform a main heat pump cycle with a respective operating fluid, which comprises: a main condenser (S4) adapted to perform the condensation of the operating fluid of the main heat pump cycle and intended to be connected to an external circuit of a first thermal user plant (10) in a heating operating mode of said heat pump unit (1), a first heat exchanger (S2), connected downstream of the main condenser (S4) and upstream of expansion means (L2) of said the main circuit (2), adapted to perform an undercooling of the operating fluid of the main heat pump cycle after the condensation of the same in the main condenser (S4), and a main evaporator (S8) adapted to perform the evaporation of the operating fluid of the main heat pump cycle and intended to be connected to an external circuit of a heat sink (20) in a heating operating mode of said heat pump unit (1). The heat pump unit (1) further comprises a secondary circuit (3) adapted to perform a secondary heat pump cycle with a respective operating fluid, which comprises: a secondary evaporator (S2) adapted to perform at least the evaporation of the operating fluid of the secondary heat pump cycle and in heat exchange relationship with the first heat exchanger (S2) to transfer heat power released by the operating fluid of the main heat pump cycle during said undercooling to the operating fluid of the secondary heat pump cycle, and a secondary condenser (S1) adapted to perform the condensation of the operating fluid of said secondary heat pump cycle (HPCS) and intended to be connected to the external circuit of the first thermal user plant (10) or to an external circuit of a second thermal user plant, different from the first thermal user plant (10).

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